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The editorial staff welcomes all comments and suggestions regarding the format, contents, and contributions of news items concerning alumni as well as publishable articles. This is your journal which, with your help, can serve as a forum for discussions, opinions, evaluations of various clinical tests and procedures or any topics of mutual interest.

President's Message

Glen A. Gulezian'65

Dr. Glen Gulezian '65 President Alumni Association

1973! Nationally, it shapes up to be an inaugural year of change! At MCO your alumni association is also inaugurating a new calendar year of events for you.

But 1972 was a banner year! We reached a record number of paid up Alumni members, 560. We also saw many new and interesting innovations, both at the college and in the Alumni Association. Let me give you a quick summary:

ALUMNI REPRESENTATION TO THE BOARD OF TRUSTEES — During 1972 we elected two more alumni (making a total of three) to represent us on the Board of Trustees of the College.

In March we elected Dr. Alton Lamont, Class of '55 and past Alumni President, for a period of three years. Also in December, following another election, Dr. Albert Glickman, Class of '42 was elected as our third representative to the Board. These two, along with Dr. Joseph Bickford, Class of '65, serve in direct response to the wishes of *your* Alumni Association. They serve you. They are our voice in college affairs. If you have any questions or concerns regarding MCO, feel free to call upon these men for answers. For many years we have tried for representation — we now have it! So let us make the best use of our voice.

NEW FORMAT FOR ALUMNI BULLETIN — During the past year a complete revamping of our Alumni Bulletin brought about a unique 38 page quarterly. The bulletin not only includes current college information and activities of the Alumni, but special papers on research and development by members of the faculty and students at the college. Our hope is that this bulletin will become not only a voice for our college but a forum for the publication of papers. We need your support and suggestions. Fell free to give your comments to our editors, Dr. Morris Berman and Dr. Hy Kamens.

STUDENT EMERGENCY LOAN FUND — At the request of Mr. Joseph Jefferson, Vice-president of the College, the Alumni Association has set up a $1000 Emergency Loan fund to be administered jointly by Dr. Kamens and Mr. Jefferson. This fund, appropriated from the Alumni savings account, allows students to borrow on short term notes for any emergency, financial situation. There is no interest and repayment will be up to the administrators of the fund.

At our last report meeting the fund had already been used in three situations where students have found the need for small amounts of money.

ANNUAL AWARDS BANQUET — In conjunction with the college your Alumni Association co-sponsored an Annual Awards Banquet for the graduating seniors, their families and friends. I had the privilege of addressing the graduating class and presenting the Alumni

[Continued on page 21]

Active Alumni Membership For 1972

The following list of Alumni includes those who, by paying their 1972 dues, have made it possible for the Alumni Association to function as an organization dedicated to the interests of M C O. This list is corrected to 12/20/72. If your name should have been included, please contact Dr. Morris L. Berman, Executive Secretary, 424 Beacon Street, Boston, Mass. 02115 and the necessary correction will be made.

*** ASTERISK INDICATES LIFE MEMBER**

Class of 1920

Lincoln, Ward C.

Class of 1921

Higgs, John Alden

Class of 1923

Elliott, Harold E.

Class of 1924

Gifford, Paul A.
Holden, Charles
Minihan, Lester
Seavey, Eugene F.

Class of 1925

Booth, Andrew R.
Rand, Gleason A.

Class of 1926

Costa, Thomas

Class of 1927

Cannon, Francis R.
Gordon, Morton M.
Klibanoff, Harold
Martins, Francis J.
Palmieri, Gerardo A.
Parsons, Robert A.
Sloane, Albert E.
Sullivan, J.A.

Class of 1928

Gahe, Samuel
Rogers, Merlin F.
Smith, T. Blake

Class of 1929

Collins, James
Green, Kenneth M.
Hall, Charles M.
Saitz, Arthur

Class of 1930

Berman, Morris L.
Belyea, David S.
Burgess, Bradford, F.
Marshall, Carleton K.

Class of 1931

Dunbar, Melvin
Cahill, Paul V.
* Forgues, Mark J.
Hilliard, Deane A.
Schurgin, Henry

Class of 1932

Asarkof, John E.
* Baker, Richard W.
Lestch, Solomon
* Montminy, Joseph F.
Namias, Foster

Class of 1933

Cline, Paul S.
Drucker, Samuel
Kaye, Maxwell M.
Lovering, Warren R.
O'Brien, John W.
Saliba, Ned
Schoenhaum, Morton
Truesdell, E. Perry

Class of 1934

Brucker, Frederick E.
Goldberg, Manuel L.
Gribbin, Donald
* Gulezian, Aram S.
Helman, Leonard
Katz, Robert
* Klibanoff, Max
Lager, Nathan
* Parrott, Adelbert
Soutra, Marcus
Tucker, Paul

Class of 1935

Emmes, Arthur B.
*Miller, Robert

Class of 1936

Anapolle, Louis
Comstock, Frank
Emmons, William E.
* Exford, Donald C.
* Fishelson, Max E.
Fox, William H.
Glixman, Morris
Lemay, Gerald L.
Moss, Barney
* Robinson, Norman E.
Wayne, George J.

Class of 1937

Berman, Edward
* Ferris, Richard
Goldberg, Nathan
Halpren, Myer
Karvelas, Stephen
Perlow, Milton
Plekavich, Louis
Preston, Robert
Rakusin, Leon
* Roy, Alfred J.
Schack, Jacob S.
Shepard, Harold
Shuman, Howard
Smith, Preston
Taillon, Leo
Volkel, Harry H.

Class of 1938

Alie, Robert P.
Bouvier, Joseph P.
Czelusniak, Henry
Dexter, Richard
Donahue, Charles
Grossman, Benjamin
* Hanson, Alfred
Harris, Malcolm D.
Levandowski, Thaddeus
* Pacheco, Leonard
Swartz, Samuel
Tiihonen, Toivo

Class of 1939

Berman, Max
Bessin, Harold
Capone, Dominick V.A.
Clark, Wilbur G.
Clark, Winston C.
Davis, Alhert
Davis, Eugene M.
Dexter, Porter O.
Eisenstadt, I. M.
Eramo, Alfred
Faldman, Morton J.
* Feltus, Donald
Fine, Melvin
Green, Morton B.
* Hodgkins, David G., Jr.
Kahn, Martin
Keller, Morris L.
Lemoi, Leo
Lepie, Murray
Meyers, Edward F.
Noury, Romeo
Stephenson, Kendall
Schiano, Barholomew
Sloane, Arnold
Vale, Arthur
Wagner, Frederick
Wecker, Irving
Ziegler, Frederick

Class of 1940

Woolf, Hayvis

Class of 1941

Bergeron, Isidore
Corrente, William
Coyle, John J.
DeNatale, Leo C.
Gilder, Julius
Lappin, Paul
Mayer, Norman
Paster, Norman
Rogol, Ralph
Storer, Edward L.
Taddonio, Joseph
Toy, Harold
Weisman, Theodore

Class of 1942

Caldarone, Harold
Cline, Harold
Fine, Henry
Fritz, Ralph
Garfi, Frank
Glickman, E. Albert
Jacobs, Joseph
MacKenzie, Stewart
Mark, Marshall
McVay, Ernest
Mechanic, Janet
Otis, Louis
Rodman, Robert
Rosemark, Solomon
Wasserman, Samuel
Weisman, Arthur
Upham, Louis

Class of 1943

Bloom, Charles S
Bowman, Charles
Collins, John F.
Craven, Joseph
Grauhart, Irwin
Issokson, Bernard
Kates, Malcolm
Kraus, Robert I.
Levine, Arnelda
Morin, William J., Jr.
Nicolosi, Sebastian
Quinn, John E.
Roberts, Jerome
Saperia, Norman
* Wilson, Clinton
* Kofos, Monthe

Class of 1944

Danielan, George
Miller, Murray
Schlossberg, Samue
* Smith, Waldron
Wolfson, Leonard

Class of 1945

Flynn, Francis

Class of 1946

Goldenberg, Edward
Kuhn, Mitchell
Richmond, Cortland

Class of 1947

Buonfiglio, Arnold
Kamens, Hy
Potvin, Bernard
Pezzullo, Anthony
Landry, Kenneth C.
Cowan, Arthur

Class of 1948

Dolan, Dorothy
Flaherty, John L.
* Glasser, Irving F
Goldstein, Jack
Gollinger, Murray
Kozol, Frank
Landall, Robert V.
Lucia, Victor
MacFarlane, David
Norman, William
Ross, Raymond
Rowe, Robert
Saltzman, Seymour
Summers, Gordon
Turner, Edward

Class of 1949

Bagdigian, Mitchell
Barresi, Joseph V.
* Eleftherio, Arthur
Gallaway, C. Farrell
Ginsburg, Leon
Holmes, Richard
Jablow, Norman
Krassin, Bertram
Levis, Charles E.
MacLean, Alexander
Moritz, Robert
Nahigyan, Donald
Richmond, Melvin
Riley, Norman
Rockett, Joseph M.
Ruby, Norman
Smith, Chester
Snow, Richard M.
Stein, Jerome
Stewart, J. Malcolm
Emple, Herbert C.
Klar, S Robert

Class of 1950

Baboian, Jack
Basil, Victor
Berger, Stuart
Bram, Marvin
Byrne, Donald J.
Cedrone, Joseph
Cooperstein, Carl
Cote, Armand
Cowan, Burton
Davis, Gerald S.
Dinin, Ralph I.
Feldman, Gerald S.
Fogg, Roland A.
* Gerlan, Harry
Gerson, Burton
Gersten, Seymour
Gottesman, Abraham
Kisner, Robert
Kranseler, Melvin B.
Laton, Dexter W.
MacDonald, Lawrence
Moody, Robert
Musserian, John
Neault, Roger
Pollack, Harold
Rice, Norman
Robinson, Donald
* Slobins, Solomon
Tully, John J.
Werthamer, Egon R.
Wolff, Hans M.

Class of 1952

Ackley, Donald J.
Baronfeld, Leon
Becker, Norman L.
Berman, M. Stuart
Bloomfield, Israel
Bogage, Eugene
Chernoff, Erwin
Cochary, Thomas G.
Cohen, Henry
Emery, Richard
Feinblum, William
Finklestein, Meyer
Goodwin, Robert

Active Alumni Membership For 1972

Goolst, Theodore
Hill, Oscar B.
* Holmes, G. Burtt
Insuik, Nathan
Kahn, Ernest
Kates, Murray
Kaminstein, Sidney
Kershner, Leo
Ouellette, Romeo
Rosselli, William F.
Saul, Robert
Stecher, Bernard
Vermes, Thomas L.
Zeltzer, Harry
Zuckerbaum, Leonard

Class of 1953

Aaron, Herbert
Bern, Philip
* Bagdigian, Simon
* Casey, James A.
Claughsey, Charles
Federici, E. J.
Finger, Leonard
* Glasser, E. S.
* Medeiros, Joseph V
Pursell, Saul
Schwartz, Ira
Tedesco, M. P.

Class of 1954

Alie, Raymond
Brault, Jerome J.
Fountain, William, Jr.
Guida, Carmine
LaPlante, Rene
Levine, Stanley
Marcus, Harry S.
Page, Louis
Peloquin, Marc
Shapiro, Abraham
Toll, Morris
Tuckman, Harvey
Wasserman, Jerome

Class of 1955

Couch, Thomas
Lamont, Alton
Packer, Robert
Ryan, William J.
Snyder, Donald P.
Svagdys, Joseph
Taylor, Paul A.
Tolford, William R

Class of 1956

Graham, Robert
Lamont, John
Milot, Robert
Sol, I E.

Class of 1957

Alger, Joseph
Baer, Martin J.
Coleman, Howard
Connors, Charles J.
Korb, Donald
Prince, James, R
Richards, Edward W., Jr.
Shulman, Robert

Class of 1958

Fiorentino, John
Hughes, Philip
Kagan, Sumner
Manning, Paul
Rudy, Syndey, M.

Class of 1959

Bardfield, Louis
Drucker, Armand
Flax, Nathan
Gaudette, Roland E.
Houle, Emery A.
Iati, Anthony
Mehl, Edward C.
* Seavey, Forrest

Class of 1960

Banford, Richard
* Comalli, Joseph
Crinigan, Richard
Field, Frank
Elliot, Theodore, F.
Knoop, Robert L.
Krellen, Norman L.
Lapidus, Arnold, J.
Leavitt, Harvey
Loring, Jonas
Lizotte, Earl
* Martus, Caroll
McNulty, Robert
Selbert, Irving G.
Sellars, Gilbert
Steinberg, Philip
Sweeney, Charles W.
Shaneson, Elias
Varnum, Norman K
Wiener, Mark L.
Tartell, Maurice

Class of 1961

Blanchard, Murray I.
Bournakel, George S.
Brodsky, Bruce G
Donatelle, Joseph R.
* Faye, Gerard J.
Field, Kurt K.
Goldman, Herman
Hubal, A.A.
Kennedy, Robert J.
McCarthy, Roger
Nochimson, Robert
Saferstein, Donald R.
Senn, Robert E.
Schwartzman, Norman L.
Strauss, Sheldon
Tocher, Ralph B
* White, Paul F.
Wolmer, Victor L.
Wertheim, George

Class of 1962

Bluhm, Alvin
Brennan, Robert E.
Consiglio, Michael
Fantazian, James H.
Fleck, Abraham
Friedman, Philip
Lambert, Benjamin, III
Murphy, Carl I
* North, Robert W
Prevost, George, Jr
Simmons, Edwin F.
Snetsky, Harvey
Stabile, Richard J.

Class of 1963

Callinan, John E.
Gramsey, Richard
Grossman, Morris I.
Kuperstein, David
Ouellette, James E
Sacks, George
Raboy, Edward
Strehel, Gustave
Simons, Clifford
Swartwout, J. Baxter
West, Harvey G
Zendel, Myer
D'Amico, Joseph A.
Schulman, Milton W.
Stamm, Lawrence

Class of 1964

Baum, Marvin
Bello, Richard
Brockway, James
Grossman, E. Robert
Gustafson, Carl
Housman, David
Levin, Franklin
Ludlam, William
Michelson, Franklin
Patnick, Joseph
Rose, Frederic
Steinberg, Edward L.

Class of 1965

Bicktord, Joseph
Copeland, Arthur
Getter, John
* Gulezian, Glen
Jordan, David
Lewis, Alan
Linsky, Philip
Maier, William
Miller, Robert
*Montminy, Paul
Pass, Harry
Perry, Calvin
Porter, Tere
Silverman, Samuel
Tieri, Arthur
Toscano, John

Class of 1966

Archibald, John
Blanchard, Robert
Carpenter, Willard
Czelusniak, Donald
Elgart, Matthew
Garston, Matthew
Ferris, David
Georgis, James
Glennon, Joseph
Gruning, Carl
Kirn, Bruce
Phaneut, Ralph
Kavanagh, John P.
Titelbaum, Robert
Twarowski, Chester J.
Zglobicki, Louis J.

Class of 1967

Adrien, Paul
Blank, Frederick
Boyek, Leonard
Cerruti, Peter
Cowles, Neill
Duggan, John A.
Gaul, Lionel
Greenberg, William, A.
Kaplan, Allen
Levitt, Ronald
Newman, Michael A.
Nichols, Wesley
Pimentel, Frank J.
Polizzi, Sebastian
Regan, David
Smith, William
Suckow, Alfred E.
Tishler, Ronald
Vogel, Arnold
Woll, Frederick

Class of 1968

Brackley, Lester M
Grossman, Allan L.
Saramandis, Steven
Scott, Clifford A
Scott, Mary K.
Smiley, Harrison T. II
Sullivan, Garrett F.
Tomasi, John J., Jr.

Class of 1969

Appleton, Daniel
Arruda, Kenneth
Boroyan, Henry
Cassani, Anthony
Dong, Han
Doughty, Carl E.
Duckman, Robert
Hertzel, Marvin
Mackenzie, John
Menard, Norman
* Montminy, George
Price, Gordon
Rubin, Errol

Class of 1970

Grant, Edward
Jankolovits, Arthur S.

Class of 1971

Casazza, James A.
Cottone, Peter P.
Fisch, Barry M
Lazarus, Stuart M
Sarlitt, Richard A
Schram, Neil I.
* Shatt, David L.
Tompkins, James L.
Walton Terry L.

Class of 1972

Balch, Charles W., Jr.
Bausch, Daniel E.
Berbrier, Lawrence J.
Blumberg, Gerald
Brodie, Jerold J.
Brumberg, Jack B.
Cavallerano, Anthony A.
Cline, Ronald M
Dell, William M
Diamond, Michael S.
Fell, Steven G.
Feltus, Stephen A.
Finkelstein, David M.
Friedman, David L.
Gleason, Joseph A.
Graves, Richard A. III
Hancock, Douglas S.
Hashim, Joseph D.
Iannuccillo, Anthony
Kramar, Arkady
Levoy, Ralph J.
Martino, Richard C.
Madore, Normand R.
Mitchell, Charles R., Jr.
Nathanson, Irwin M.
Nyman, Neal N.
Nyman, Jeffrey S.
O'Donnell, Brian M.
Phelan, Patrick F.
Platt, Robert L.
Prupas, Peter C.
Robillard, Richard H.
Rosemark, Bob M.
Roy, Brian P.
Savage, Norman J.
Schurgin, David J.
Shapiro, Arnold
Smith, Robert A.
Steinek, Stanley D.
Szikman, Henry
Tamsett, Robert G., Jr.
Tishler, Steven J.
Weinstock, Richard J.,
Wesson, Jeffrey A.

All members of this class are automatically paid-up for this year.

*THE PRECEDING LIST INCLUDES ALL ALUMNI WHO ARE ON OUR ROLLS OF PAID UP MEMBERS FOR THE YEAR OF 1972 — CORRECTED TO 12/20/72. LIFE MEMBERS ARE DESIGNATED BY * BEFORE THEIR NAMES. IF ANY OMISSIONS ARE NOTED OR OTHER CORRECTION DESIRED, PLEASE CONTACT THE EDITORS*

The following list is of members of the Alumni Association who have died during the past year:

Alie, Robert P. '38
Smith, Harry '26
Troendle, Edward, Joseph '70
Veaner, Arthur
Chevalier, C. Henry '38
Lannigan, George E. '24
Richards, S. Raymond
Fraher, Richard P. '27
Silverman, Samuel '65

The New MCO Curriculum — What's It All About?

By William R. Baldwin

Commencement speakers have declared endlessly that formal education is not an end but a beginning. But, graduation from a professional school is an end in that it bestows a privilege and a responsibility on the graduate that were not his before. The optometric graduate may now apply his knowledge to the care of patients, and he is expected to do it responsibly and competently. More to the point, then, graduation is a time of assessment. Is the graduate equipped and committed to fulfill the role that his diploma attests? Have the educational goals of his institution been appropriate to this purpose? And, have they been adequately fulfilled?

The optometrist, as all professionals who make judgements in behalf of others, must have various goals included for his education that do not bear directly on knowledge that is unique to his special field. These include: learning the meaning of the integrity of reason as opposed to orthodoxy; the aspiration to have constructive impact on the lives of others, rather than ambition; knowledge of what is important, not merely timely; the ability to communicate well reasoned ideas clearly, eschewing the skills of rhetorical persuasion; the discipline to act, constrained only by the dictates of logic, objectivity and good will. His education in professional school should serve these goals consistently, but they must be generated and nourished by exposure to the humanities. He must also have a knowledge of the world about him — what it has been and what it may become. Professionals cannot serve their primary roles well unless they know something of the forces that change the attitudes and the expectations of the people they serve. Pedants have a phrase to categorize the foregoing — Liberal Education.

The special body of knowledge that the optometrist understands, uses, keeps abreast of and, sometimes even contributes to, is visual science. In simpler times, when the boundaries of science were carved and reasonably clear, the knowledge and use of science were synonymous — the astronomer navigated and predicted eclipses and comets; the anatomist was a surgeon; the physicist invented machines and generated power to run them. But, as the possible uses of knowledge increase, its boundaries become obscure — the builder of bridges knew mathematics and physics, also geology and metallurgy; now, he must also know political science and population genetics — or yield to another specialty in his field. Medicine serves as a good example of the potential boundless use of knowledge (science) to serve a bounded purpose — the cure of human illness and, later, the prevention of human disease.

Just so, visual science is not primordial but is constituted of special knowledge that meets the standards of evidence ascribed to the scientific method and thereby becomes knowledge (subject to change). Visual science is incomplete and imperfect, as is all human knowledge, but clearly and artificially bound by its use to understanding how and why certain energy (physical sciences) produces response in living systems (biological sciences) and the effects of organismic reactions to these stimuli (behavioral sciences). An education in visual science then involves education in the three major divisions of science — limited not because of limited need to know but because of limits of time, resources and goals. Standards of visual science education must be based on what is sufficient knowledge of biological, physical and behavioral sciences to permit understanding what is now (and will be) known of light and its effects and vision and what affects it.

The care of patients is both a science and an art. What is known and consistent or predictable when the parameters are known is science; that which is intuitive, part of the lore or felt, is art. To the extent that patient care is a science, its study for optometry students represents the application of what is known about light and vision to human problems and human potentialities; it should be guided by men whose credentials are based on experience and reputa-

tion for outstanding optometric patient care. If high credentials of scientist and artist reside in one individual, he is one of a rare breed — too rare to fully staff teaching programs. The student's education in patient care should have balance. If he becomes too much the scientist, he will frustrate his goals for his patient and himself with his doubts concerning the unmeasurable; if too much the artist, he will not doubt enough — nor will the patient, whose only therapy might be confidence. The science and art of patient care can also be studied from the standpoint of attitudes and beliefs of patients, but little in this subject area is science. The good optometrist will know when solutions are obvious on the basis of evidence, when they cannot be; if the latter, he will develop a well reasoned attempt at solution, then objectively evaluate the attempt. He can do this only if he is trained in patient care by unusually learned scientist teachers and unusually wise and insightful artist teachers and if he has more than usual intelligence, discipline in liberal arts, knowledge of visual sciences and enthusiasm for learning to do things well in others' behalf.

THE CURRICULUM

Once the role of optometry, the scope of optometric practice and the objectives of optometric education have been defined to suit our purpose, implementation of this purpose by the design of a pattern of course work becomes possible — if not yet easy. On difficulty is in compartmentalization of learning; another is in methods of delivery. Given the oneness of knowledge and the diversity of individuals in whom it is to be stored and used, the creation of a structured and formalized system for learning is itself less than ideal. But, given other realities of time and resource limitations, we must resist the temptation to recommend putting each optometry student on a log with Mark Hopkins and one of our favorite optometric scholars and be done with educational planning. However, the constraints of past systems need not intrude on our dreams of what a curriculum should be.

The division of an ideal curriculum should depend on the categories having a relationship to the educational goals which can be analyzed and evaluated; they should be manageable; and, they should limit as little as is prudent the directions that the student may wish to give to his education. They should also permit the imposition of minimum standards of scope and mastery related to the goals.

Division of the curriculum into three major study areas seems to fit the definitions and the criteria proposed. These are: LIBERAL ARTS; VISUAL SCIENCE; and PATIENT CARE.

LIBERAL ARTS

Each optometry school in the U.S. requires a minimum of two collegiate years of instruction prior to entering professional school. Many students have earned baccalaureate degrees before they enroll. The average length of pre-optometric educational experience is slightly more than three years. Achievement of the goals enumerated that receives greatest emphasis in liberal arts curricula depends more on individual experiences than on official transcripts. However, transcripts as well as pre-admission testing probably provide the best evidence that the goals are in the process of being realized at the time of enrollment in the professional educational program. We cannot test for progress towards many of the liberal education goals of the student because the science of testing human personality and attitudes either in potential or achievement is far from perfect; but, curriculum requirements in this area especially should be as permissive as possible on the assumption that courses elected by the students are most likely to fulfill our hopes for him. In those areas in which we can test (knowledge of what is happening in the world about him, for example) ways should be instituted for the student to demonstrate achievement without formal course work. A student who reads avidly one or more of the national news weeklies, particularly if he discusses the issues with others, might very well fulfill the goal of the example mentioned above better than by taking a course or two in social sciences. Emphasis in student evaluation at entrance should be on whether he has achieved those standards we establish in terms of meeting the goals of education in liberal arts and what, for our purposes, we have defined as visual science, rather than having piled up more than the minimum number of credit hours.

VISUAL SCIENCE

For our purpose, visual science is defined as the prescribed subject matter in all sciences, knowledge of which is essential to the study of

light and vision. Prior to entrance, students are required to take introductory courses in biological, physical and behavioral sciences and/or to have passed a science aptitude and achievement test. Based on these requirements, special knowledge such as organic chemistry, biochemistry, genetics or advanced mathematics cannot be assumed. There will be considerable variation in the extent of applicants' knowledge in the pre-requisite sciences. For these reasons, and to insure maximum flexibility in meeting criteria for admission other than science education, the first professional year curriculum must provide for this wide range of possibilities. The most likely extremes are: one year of general chemistry vs. chemistry including organic and/or biochemistry; general biology only vs. a major in biology; one year of college mathematics and physics, or one course in general psychology vs. a major in psychology. The curriculum provides for these ranges by offering intermediate courses in the sciences during the first year to bring all students more closely together in their general science backgrounds. Biological, behavioral and physical sciences are separated until that point at which the principles are covered. Then, the subject matter is integrated into one study area, visual science or physiological optics.

The curriculum in physiological optics deserves special consideration because it serves two functions in meeting the goals of the educational program: the integration of the general basic sciences for the study of phenomena that are essentially optical or visual, and the application of this knowledge to patient care.

PATIENT CARE

The primary purpose of optometric education is to prepare professionals to provide visual care to patients. It is assumed that a liberal education as well as an education in visual science is essential to this purpose. The direct guidance of students in the application of the knowledge and wisdom that should constitute the primary thrust of the curriculum devoted to patient care. The didactic portion of this major curriculum category is distinguished from liberal arts and visual science in that the subject matter directly concerns when, why and how to deal with the visual problems and visual potentialities of humans. Application of this distinction can almost without exception provide a clear decision concerning whether subject matter is appropriate to the patient care curriculum. Laboratory work in patient care is clinical study.

Visual testing laboratories serve as a part of the training mode during the first three years of a student's experience. Students, however, also serve in one or more of the clinics during this period. Ideally, the student's exposure should be varied in terms of the environments in which care is rendered. The on-campus clinics include facilities for visual testing laboratories, a general clinic, a pediatric clinic and a rehabilitative clinic. However, other settings are provided to insure that the student's experiences include: working with other professionals in a general health care center; working with physicians in a hospital setting, as well as working with special populations, i.e., children, the elderly, minority groups, socio-economically deprived and those suffering from special conditions — mental retardation, severe visual impairment, etc. Especially in the clinics operated on a campus, but in other settings as well, the student learns to work with ancillary personnel. During the fourth year, he should learn to advise and be advised by non-optometric professionals.

All of optometric education can thus be assigned to one of two objectives: a thorough knowledge of visual science and high competence in patient care. Science seeks certainty. If certainty could be found, patient care would be perfect and programmed to avoid human error — and the practice of optometry would involve very different activities than now. What science achieves is clues, evidence and models that make sense on a logical and rational basis. But the acquisition of an education in general and visual science in particular produces only half an optometrist — the half that collects and analyzes information by the use of instruments and observation. The science of patient care is what our instruments and measurements suggest that we do; the art of patient care is what our experience and insights lead us to do. The full scope of optometric education must be designed to produce a professional highly competent in applying both the science and the art.

News and Views From and About Alumni

9/30/72
Dear Staff of Alumni Journal:

Congratulations on the new Journal! I have never enjoyed papers as well as I have in the first issue (Fall, 1971). So meaningful. Kantrowich and Vito were great although a little more care should have been taken in Kantrowich's paragraph on drug treatment of the dyslexic. Thorazine is a dangerous tranquilizer.

Keep it coming,
Harold Toy, '41

10/13/72
To: M.C.O. Alumni Association

..... Having just received the Journal, I'm happy to see the many improvements at M.C.O. Keep up the good work.

Leonard J. Boyek, '67

Dr. Don Horley, a former President of the Alumni Association, and a member of the Class of '38, has notified us of his retirement from the active practice of Optometry and has requested that we forward our Journals to him at his new place of residence, San Jose, Costa Rica. We wish him the best in his planned retirement and hope to hear from him again.

Dr. Erwin Nathanson, Class of '72, wasted no time after graduation in June. His marriage to Miss Karen Swartz of Malden, Mass. took place on August 26th and, after a honeymoon trip, plans on locating in Rego Park, New York.

Dear Dr. Baldwin:

Paul Kantrowich, Class '74, is to be complimented on his masterful paper on Dyslexia which appeared in the Alumni Journal (Fall issue 1972). Please extend to him my congratulations.

Albert E. Sloane, M.D.
Class of 1927

The Emergency Loan Fund of the Alumni Association has been funded by a recent gift of the Association to permit short term loans to students of up to $200. Loans may be granted for up to 90 days on an interest free basis. Dr. Kamens administers this fund.

? WHERE ARE THEY NOW ?

(This column is devoted to the effort of keeping our mailing lists up to date. Please notify Dr. Morris L. Berman, Secretary, MCO Alumni Association, 424 Beacon St., Boston, Mass. 02115 if you have the present address of the alumni listed below.)

Bertram Geisinger '64
Eaton, Gregory '69
Remeney, Peter '68
Hannah, James '65
Pasichow, Solomon
Aldrich, Russell F. Jr. '49
Morally, Edward '36
Arseneault, J. Malcolm '47
Friedman, Alex '38
Carmen, Lawrence '52
Uva, Anthony '52

CLASS OF 1948 REUNION

The Class of 1948 will celebrate their 25th reunion on Saturday Evening, March 17, 1973. The location has been tentatively set up at the Harvard Club on Commonwealth Avenue in Boston.

The reunion committee consists of Drs. Robert Bianchi, Harold Goren, Frank Kozol, Arnold Richmond, Raymond Ross, and Seymour Saltzman. The committee has also announced that one of their classmates, Dr. Syra Enriquez Alemany has been selected as Optometrist of the Year in Puerto Rico. Dr. Alemany will participate in the class reunion festivities.

Dr. Harold Goren will serve as Toastmaster, and a pleasant and exciting evening is anticipated by all.

ALUMNI ACHIEVEMENTS

CLASS of '31 **Mrs. Ruth Forgues** (wife of Mark **Forgues '31**) was recently

[Continued on page 9]

Mass. College of Optometry Alumni Association

(for members and their guests)

presents

SAN FRANCISCO HOLIDAY

Including Las Vegas and Disneyland

- TO THE AOA CONVENTION -

June 24 to July 7, 1973

14 Days, 13 Nights
Sunday to Saturday

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Single Supplement $100.

Includes all transfers from airport to hotels

NOTE: All rates based on tariffs as of July, 1972 and Subject to Change

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* Direct jet from Boston to Las Vegas. Meals and beverages served aloft. Late morning departure — early afternoon arrival.

Las Vegas

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* Extravaganza Revue (Love Sensation). (Tips and Taxes included).
* Special Breakfast
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Nite On The Town

Four drinks, dinner, and show at Tropicana Lounge at the fabulous Follies Bergere.

San Francisco — AOA Convention (5 nights)

* Deluxe accommodations at the San Franciscan Hotel — minutes away from the AOA headquarters hotel.
* One glorious week of sightseeing.
* (Optional) Side trip to the beautiful Muir Woods.

Exciting Three Day Parlor Coach Tour to Los Angeles

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* Deluxe accommodations with private bath for two nights at first class hotels.
* All meals (7)

Los Angeles (2 nights)

* Two nights at the famous Ambassador Hotel home of the renowned Coconut Grove Night Club.
* Putting green
* Swimming Pool

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* Three days, two nights at the fabulous Disneyland Hotel.
* Direct Monorail service right to Disneyland.
* Admission ticket to Disneyland.
* Ten ride Disneyland ticket book.

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For further information, contact and mail deposits to:

Alumni Assoc. Mass. College of Optometry
c/o Dr. Glen A. Gulezian, 191 Merrimack Street,
Haverhill, Massachusetts 01830

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[Continued from page 7]

installed as President of the Auxiliary to the AOA.

CLASS of '43 **Alfred J. Roy** now serves as President of the Mass. Society of Optometrists.

Clinton L. Wilson, Jr. recently installed as Secretary of the Mass. Society of Optometrists. Both Dr. Roy and Dr. Wilson are Life Members of the Alumni Assoc.

Dr. Costos C. Poulos is President of the Connecticut Optometric Association.

CLASS of '44 **Dr. Roland H. DeCesare** is President-Elect of the Rhode Island Optometric Association.

CLASS of '55 **Dr. Paul Taylor, Jr.** is now 1st Vice President of the Connecticut Optometric Association.

CLASS of '52 **Dr. G. Burtt Holmes** has been elected Trustee of the AOA for a three year term. Dr. Holmes is a trustee of M.C.O. and also a Life Member of the Alumni Association.

CLASS of '57 **Dr. Howard Coleman** has been re-appointed to the Council on Clinical Optometric Care, an AOA committee.

CLASS of '60 **Dr. Carroll Martus,** a Life Member of the Alumni Assoc., has been appointed to serve as Chairman of the AOA Committee on Practice Management.

Dr. Norman K. Varnum is now President of the Maine Optometric Association.

Dr. Charles W. Sweeney is Secretary of the New Hampshire Optometric Association.

CLASS of '64 **Dr. David H. Upton** and **Dana L. McCurdy** are, respectively, Secretary and Treasurer of the Maine Optometric Association.

CLASS of '61 **Dr. George S. Bournakel** of Lewiston, Maine is President-elect of the Maine Optometric Association.

CLASS of '66 **Dr. Willard C. Carpenter** of Lebanon, New Hampshire now handles the finances of the New Hampshire Optometric Association in his position as Treasurer.

Dr. David Ferris heads the Rhode Island Optometric Association as President.

CALENDAR OF EVENTS

March 18 - 21, 1973
NECO 51st Annual Congress - Boston, Mass.

***

March 31, 1973
Massachusetts College of Optometry
Commencement

***

June 24, - July 7, 1973
A. O. A. Convention - San Francisco, Calif.

Mark Shafiroff, Class of '73, and wife, Marsha, are the happy parents of a baby boy, Matthew, born 19 December 1972, at the Newton-Wellesley Hospital, Newton, Mass.

Hayvis Woolf, O.D., has been named "Cranstonian of the Month" by the Cranston Chamber of Commerce for the month of November. Dr. Woolf, who lives with his wife Lillian at 11 Glenwood Avenue, graduated Massachusetts College of Optometry in 1939. He spent five years on active duty with the U.S. Army and Air Force, both as an enlisted man and officer in the United States and the CBI Theatre. He completed 27 years of service with a rank of Lt. Col. in 1969, holding the position of Deputy Consultant in Optometry to the Surgeon General of the U.S. Army headquartered in Washington, D.C.

[Continued on page 25]

Problems of the Partially Sighted

by
Sarkis Bournaian, A.B.
(1st Year Student)

This paper deals with the partially-sighted person's perceptual adaptation to his environment and the possible effects of his disability on his physical, mental, emotional and social development. To arrive at an understanding of these related topics, several questions must be answered. First of all, an adequate definition of partial sight must be formulated to ensure that we are dealing with an easily identifiable, although admittedly heterogeneous group. Next, in discussing the perceptual adaptation of such persons, it is necessary that we understand the basic components which make up normal vision and what inadequacies result when these components are lacking in some degree. The person's psycho-physical adaptation to these inadequacies, in an attempt to achieve an optimal level of visual functioning and to defend himself against the negative aspects of his disability, can then be analyzed. Finally, we come to the effect of the person's disability on his total development; for no matter how well one adapts, a disability, particularly a visual one, continually poses a multiplicity of new problems in living and it imposes, at the same time, a certain number of definite restrictions or limitations beyond which the person simply cannot go.

To examine the perception of the partially-sighted person and its effect on his total development, we must have some idea of what limited vision is so we can determine whom we should consider partially-sighted in terms of their actual functioning. Unfortunately, most of the present definitions, especially the most prevalent "legal" ones, are not adequate in determining a person's specific level of visual functioning. They are generally limited in scope, testing only for certain aspects of vision by fixed methods. The current "legal" definitions of blindness and partial sight are too rigid to serve as the basis for determining anyone's educational and vocational placement. The degree to which a child uses his vision is a significant variable in the educational process and this cannot be determined by objective measurement.[1]

Hathaway defines the partially-seeing as:

1. Children having a visual acuity between 20/70 and 20/200 in the better eye after all medical and optical help has been provided.
2. Children with serious, progressive eye difficulties.
3. Children suffering from diseases of the

eye or diseases of the body that seriously affect vision.

4. Children who have undergone eye operations and need psychological adjustment; children with muscle anomalies, especially strabismus.
5. Children with a visual deviation from the normal who, in the opinion of the eye specialist, can benefit from special education facilities provided for the partially-seeing. (e.g., Children unable to read regular print whose vision falls above the 20/70 category.)[2]

Abel describes five categories or degrees of visual acuity:

1. Total blindness or light perception, or visual acuity up to 2/200; is unable to perceive motion or hand movement.
2. Motion or form perception, or visual acuity up to 5/200; unable to count fingers at a distance of three feet.
3. Visual acuity up to 10/200; unable to read large headlines of a newspaper, but does have some travel vision.
4. Visual acuity up to 20/200 and is able to read 14 point or smaller print; is able to read large headlines in a newspaper.
5. Visual acuity of 20/200; could read 10 point type, but has insufficient vision for those daily tasks that require vision.[3]

Fonda's grouping of visual acuity represents an even more practical classification for the partially-sighted. His definition is based on an arbitrary standard for the greatest use of residual vision — and his criterion is that the child can be educated visually. In Group I he includes the totally blind and those with light perception. In Group II he includes those with 2/200 to 4/200 visual acuity, whom he feels should be encouraged to read print of whatever size possible. In Group III he refers to those with 5/200 to 20/300, and Group IV 20/250 to 20/70. He feels that the two should be taught to use their vision only. [4]

In this paper the definition of the partially-seeing as expressed by Hathaway will be accepted, but, in addition, there will be included the larger and more heterogeneous standards by Fonda and Abel so that any person, no matter how low his visual acuity may be, can be considered partially-sighted. According to the legal definitions of blindness most frequently employed by agencies and states to determine eligibility for services for the blind, a person is considered legally blind if his corrected visual acuity in the better eye is 20/200 or less, or he is considered blind if the widest diameter of his visual field subtends an angle no greater than 20 degrees, even though his visual acuity in that narrow field may be better than 20/200. [5] In other words, a legally blind person is a person having only tunnel or central vision with no peripheral vision, or else having central vision of 20/200 or less.

In the past, children with visual acuities of 20/200 or less were in general treated as children without sight, and were taught to read braille. However, some children below this cut-off point have unusual visual efficiency, and on the basis of recommendations and observations may be better off physically, psychologically, and socially by using their vision in their education.[6] Experience has shown that many children with visual acuity with less than 20/200 can see well enough to make use of equipment and special education media provided for the partially-sighted, and are identified as partially-seeing rather than blind.[7] Of the 14,125 legally blind children studied in a survey by the U.S. Office of Education in 1960, less than 25% were totally blind, more than 60% had sufficient vision for instructional purposes, and more than 80% with 20/200 visual acuity used print.

Thus, the legal definition of blindness originally designed for the purposes of welfare and rehabilitation is becoming more obsolete, just as the traditional definition of partially-sighted children (20/70 to 20/200) is becoming more flexible, as many legally blind children with only small amounts of residual vision enter classes for the partially-sighted in the public schools. Partially-sighted persons can soon be expected to comprise a much wider range of visual acuity levels than formerly. This paper will consider persons as partially-seeing if they are able to use any part of their vision as their chief channel of learning. In articles cited in which partial sight is viewed according to the traditional definition by visual acuity 20/70 to 20/200, it should be kept in mind that a much wider group could be included.

Eyesight is a composite process involving several components which aid and supplement one another. Together they are capable of providing the great versatility and relative ease of normal vision. When one's eyes are damaged

by disease, maldevelopment or injury, as in a partially-sighted person, these components are impaired, resulting in a reduction of functional vision and a loss of visual efficiency. Among these components are:

1. Central visual acuity of each eye
    a) near vision
    b) distant vision
2. Binocular vision
3. Muscle action
4. Peripheral vision
5. Color vision [8]

Although it would be desirable to obtain an accurate knowledge of the partially-sighted individual's visual capacity and his ability to function as a result of it, this is almost impossible to do because there are few ways in which realistic insights and comparisons can be made. Often the partially-sighted individual himself has a very inaccurate idea of just how well he sees and how he functions. It is natural and desirable that we understand each other through a commonality of experiences and fuctions. A sighted person accepts without question the visual capacities and experiences of another sighted individual. The partially-sighted individual on the other hand is likely to feel somewhat isolated and deprived of understanding or identity relative to this lack of commonality of experiences between himself and others. Very little is known concerning the adaptability of the human being and his capacity to reorganize and obtain information from the numerous stimuli about him. The many causes of visual loss and the variety of resulting conditions make it almost impossible to isolate sufficiently large homogeneous groups of visual problems and experiences among the partially-sighted with which to carry out scientific research into the manner by which the individual configurates as a result of visual stimuli.[9]

When discussing the psychophysical adaptation of the partially-sighted individual, two factors must be considered.

1. The specific difficulties under which the partially-sighted persons operate as a direct result of
    a) A stereotyped view by agencies and the general public of their condition.
    b) Their visual handicap.
2. The role of perceptual training and low vision optical aids in the rehabilitation process.

While totally blind persons must rely entirely on their other senses, partially-sighted persons must help themselves and be helped to use whatever vision they have in coordination with their other senses. Wolf states, "It is now generally acknowledged that a person should use whatever vision he has, not because such use affects any change in physical condition, e.g., actual visual acuity, but rather because visual abilities improve with stimulation and use. When a partially-sighted person makes full use of vision, perception increases and what he sees becomes a more meaningful clue to his environment."[10] For example, he may see only a small part of a street sign, but it is enough to tell him whether or not it is the street he wants. He may be able to see only the outline of a tree trunk, yet it tells him the path to his house is a few steps ahead. Such an increase in the use of visual clues to the environment can be immeasurably important to a partially-sighted person.

Some of the partially-sighted person's difficulties in visual functioning may be traced to lack of proper perceptual training by agencies and a lack of acceptance by the public rather than to his actual handicap. Those in agencies for the blind as well as some members of the general population often act, talk, and think as though individuals are blind or not blind, even though most "blind" people have usable vision. In the case of agencies, this type of stereotyping results in orientation, mobility, and other perceptual training programs that are geared largely for totally blind people. The differences between the functioning of the blind and visually limited persons need to be better understood and reflected in the structuring of services offered by agencies, so that maximum attention is given to developing the remaining visual potential of low vision persons. Travel techniques used by the totally blind can then be subtly implemented if appropriate. Unfortunately, because of the prevalence of the stereotyping effects and because there is little in literature or research to guide the agencies for the blind who are willing to make the distinction between persons with no vision and those with some vision,

there are now only a few programs of perceptual training which have been specifically designed to utilize low vision in mobility. I will describe two of them under the role of perceptual training and low vision optical aids in the rehabilitation process.

Lack of public acceptance may hinder the visual functioning of partially-sighted people. I am convinced that the public, due to lack of education, either does not recognize any intermediate condition between sight and total blindness in terms of functioning, or does not realize that the behavior of the person with limited vision is simply the result of his determined continual effort to see. If a person wears glasses, the public usually assumes they correct his vision to normal and that he has a normal visual field; after all, there are two glass lenses perched on his face, ergo, he must see out of both of them. The fact that a person may have a very restricted visual field does not seem to occur to people who judge too much by outward physical appearance rather than by analyzing behavior or questioning the person who is often willing to supply requested information he would not volunteer. When the partially-sighted person adopts unusual postures, tilting his head or body to see better, the public usually interprets this as awkwardness. When he does not recognize friends waving to him or cannot distinguish between faces at a social function, he is looked upon as a snob. Occasionally, when he mistakes a person for someone else, he is looked upon as a comic. The public does not realize that defective vision may be fully adequate for the person's needs only in very controlled situations but that for the most part a person with partial-sight has a very unclear and incomplete view of the world. Some things, especially details, may he so unclear that he misses them entirely, e.g., reading a blackboard, and his lack of response may be taken for inattention or stupidity. It is a sad comment on the lack of public education and communication that the legally blind individual may carry a cane not so much to protect himself against the results of his own visual malfunctioning to which he is accustomed, as to protect himself against the attitudes of a misguided public who may place him in actual physical danger by overestimating his ability or who react with irritation and annoyance in response to his best efforts to use what vision he has.

The second factor relative to the psychophysical adaptation of the partially-sighted individual is the actual physical handicap. Just as partial-sightedness is not blindness, neither is it merely a lesser amount of normal sight; it is a different kind of sight. The conditions under which the partially-sighted person functions are maximum and rigid compared to those under which the normally sighted individual is capable of operating. Quite often he is faced with a restricted field of vision as well as fixation problems arising from the need to be closer to the object. Added to these, he has to contend with awkward, strenuous or difficult visualizing conditions. Most eye conditions are accompanied by nystagmus, an involuntary searching of the eye to find maximum fixation. Depth perception and binocular vision are probably not present, as more often than not there is only one useful eye, or one eye which is much stronger than the other. [11] Each partially-sighted person's visual defect is different, and the amounts of useful vision and fields of vision vary enormously. Even among those whose visual defects may be categorized under a common heading, e.g., cataract, glaucoma, nystagmus, etc. — no two have the defect in exactly the same proportion or with the same severity. [12] Organic conditions cause some to acquire only a global appreciation of images and to have difficulty with detail; others appreciate only elements of the whole without the capacity to synthesize the discreet perceptions. [13] The eye conditions of the latter group that result in broken or restricted fields of vision are doubtless the most confusing and disturbing with which to function. They are often the most misunderstood and least subject to correction by the use of optical aid or glasses. The individual may possess fairly good vision in an extremely restricted portion of the eye, but his problems of fixating and locating objects are overpowering. [14] Miss Lucy Lunt, for eight years headmistress of a nursery school for blind and partially-blind children, illustrates this point well in her case history of a seven-year old partially-sighted child, Anne:

> Anne and I were walking down the street, holding hands. As we were crossing a side street she slipped off the pavement and, although I warned her, she tripped up the opposite curbstone. A passerby showed concern and whispered, "Can't she see?" I shook my head and she looked suitably sorry. Then Anne, safely on the pavement, cocked

her head on one side, stood still, and using very limited sphere of vision in her one eye said in a loud, clear voice, "Is that a girl driving the milk van?" The woman looked furious and stamped away. I felt guilty and ashamed but, short of involving the child in a long, embarrassing discussion, how could I explain that sometimes, if she was in the right position, she saw something quite clearly, but she couldn't look down at her feet? [15]

Partially-sighted persons do not accommodate to radical changes as do persons with normal sight. The distance, size and motion of objects, plus the critical nature of lighting and other factors previously discussed, allow for little or no variation. This, in part, explains the reason why many partially-sighted individuals, despite the fact that an unusual number among them have cosmetic defects due to glaucoma, corneal scarring, albinism or nystagmus, do not use dark or tinted glasses except in cases of extreme photophobia. The tinted glass, while reducing glare, also restricts the amount of light that reaches the retina, reducing the optimum or maximum under which the partially-sighted individual must function. Color and color shadings provide many distinguishing characteristics and identification clues to the partially-sighted that are not necessary to those who have normal sight, and who can draw significant information much more quickly and with less effort by using other means. Silhouettes, colors, gross characteristics and outstanding features provide more important clue values than would normally be thought. The partially-sighted person may be applying a reverse Gestalt mechanism, putting the "whole" together by observation of the "parts," and then relating them. The individual with normal sight doubtless learns to quickly visualize his total immediate environment and scan it for detail wherever desirable or necessary. In all probability both factors take place at the same time. This is usually not so in the case of the partially-sighted individual who is visually and mentally functioning on a different level than is the person with normal vision. Additionally, the partially-sighted person may employ his other senses in somewhat the same manner as the individual who is totally blind. This may be on a conscious or unconscious level, but in all probability the efficient partially-sighted individual is unconsciously supplementing his visual cues with his senses of hearing and touch.

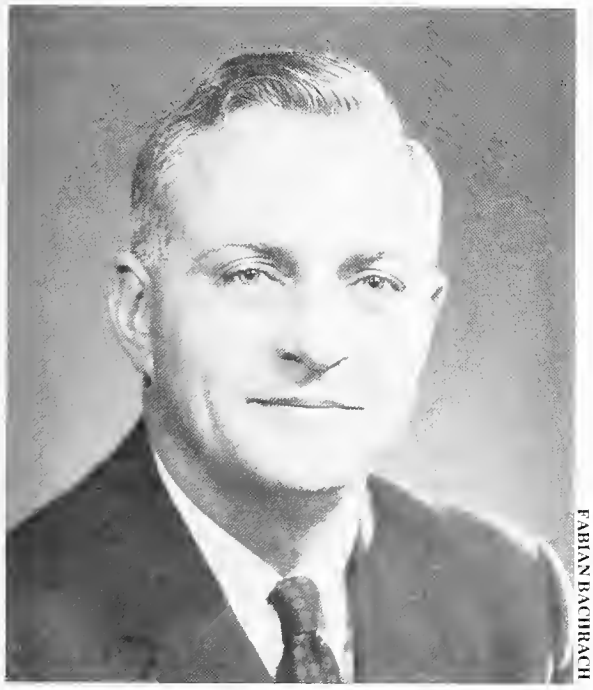
Perceptual training and low vision optical aids play an important role in the vision rehabilitation process. These will be discussed in Part II of this article in a future issue.

FOOTNOTES

1. Scholl, Geraldine T., "The Education of Children with Visual Impairment" in *Education of Exceptional Children and Youth*, Cruickshank, W.M. and Johnson, O.G. (Englewood Cliffs, N.J. Prentice Hall, Inc. 1967) p. 288.
2. Hathaway, W., *Education and Health of the Partially-Seeing Child*, 4th Ed. (New York: Columbia University Press, 1959) pp. 16-17.
3. Abel, G.H., "The Education of Blind Children," in *Education of Exceptional Children and Youth*, (eds. Cruickshank and Johnson, 1958) p. 289.
4. Fonda, Gerald M.D., "Definition and Classification of Blindness with Respect to Ability to Use Residual Vision," *The New Outlook for the Blind*, Vol. 55, No. 5, May 1961, p. 171.
5. Cruickshank, W.M. and Johnson, O.G., eds., *Education of Exceptional Children and Youth*, (Englewood Cliffs, N.J., Prentice Hall, Inc., 1967) p. 288.
6. The Pine Brook Report, American Foundation for the Blind, New York, 1954, p. 26.
7. Hathaway, W., Ibid.
8. Young, M., *The Partially-Seeing Psychological Aspects*, Pub. 154. (New York: National Society for the Prevention of Blindness) p. 5.
9. Zimmerman, Alfred A., "An Appraisal of Partial Vision; Its Dual Nature and Problems, *The New Outlook for the Blind*, Vol. 55, No. 5, May 1965, p. 155.
10. Wolf, Benjamin, "Visual Impairment is Not Blindness, *The New Outlook for the Blind.*
11. Zimmerman, Op. cit., p. 153.
12. Marshall, G.H., "Teaching the Partially-Sighted," *Health for Those Fully Alive to Healthy Living*, (England) 3(16) April 1969, p. 16.
13. Lairy, Gabrielle, Catherine, "Problems in the Adjustment of the Visually Impaired Child," *The New Outlook for the Blind*, Vol. 63, No. 2, February 1969.
14. Zimmerman, Op. cit., p. 154.
15. Lunt, Lucy, *If You Make a Noise, I can't See*, The Trinity Press, Worcester and London, pp. 33-4.

In The Spotlight

Joseph Jefferson Appointed Vice President



FABIAN BACHRACH

Joseph Jefferson, Vice President of the College

Dr. William R. Baldwin, President of the Massachusetts College of Optometry, recently announced the appointment of Joseph Jefferson of Lexington, Massachusetts to the position of Vice President of the College.

Long active in higher education, Mr. Jefferson comes to his present post from Bowdoin College where he served since 1969 as Vice President for Development and as Special Assistant to the President.

Mr. Jefferson also has served as Executive Director of the American Council for Emigres in the Professions, Inc. (ACEP) in New York City. The Council was founded in 1945 to channel talented refugee scholars, scientists, and other professionals into American education, industry, the arts, research and health care fields.

A native of New York City, Mr. Jefferson graduated from Columbia College, receiving his A.B. degree there in 1947. After graduation, he served as a business trainee at General Electric Co. in Bridgeport, Conn., a case worker and camp director for the "Big Brother" movement in New York, Assistant Director of a children's home in Jamaica, N.Y., and a staff assistant for the College Entrance Examination Board in New York.

In 1954, Mr. Jefferson joined the staff of Massachusetts Institute of Technology as Assistant Director of Student Aid and also as Placement Officer of the Institute.

In 1957 he was appointed Assistant Provost and Director of University Admissions and Financial Aid at Columbia University. In this post he had overall responsibility for all Admissions and Financial Aid policy for the various schools and faculties of the University.

From 1960 until 1966, Mr. Jefferson served as the first Executive Secretary of the National Association of College Admissions Counselors (NACAC), an organization of more than 2,000 secondary schools and colleges with headquarters now in Skokie, Illinois. He also directed its College Admissions Center and edited the NACAC Journal.

His articles, papers and reports have appeared in the NACAC Journal, NEA Journal, College and University, newspapers, NACAC Newsletter, and other publications in the field of education. He contributed a chapter, "Financial Aid Counseling — A Major Responsibility," to the NACAC Handbook for Counselors of College Bound Students, 1964-69 edition.

He has served as a Director of the National Scholarship Service and Fund for Negro Students, Academic Year Abroad, and the American Immigration and Citizenship Conference. He has been a member of the Institute of International Education's Advisory Committee on Admissions and a Trustee of Pacific University 1967-70. In 1970 Mr. Jefferson became a member of the Board of Trustees of Tougaloo College, Tougaloo, Mississippi. Mr. Jefferson also serves ex officio on the Board of Trustees of the Massachusetts College of Optometry and has been elected as Clerk of the Corporation.

(Continued on next page)

[Continued from previous page]

Mr. Jefferson has been a consultant to many organizations, including the U.S. Office of Education, State University of New York, and Illinois State Scholarship Commission. He has served on several scholarship selection committees, including the General Motors National Scholarship Program and the Marshall Fellows program.

Mr. Jefferson is married to the former Shirley Cushman of Auburn, Me. They have four children, William Charles of Buxton, Maine, Mrs. Francis Havener, III of Raleigh, N.C. and Peter Bigelow and David Parker living at home in Lexington.

Continuing Education 1973 - 1974

An opportunity for all those professional personnel interested in a program leading to the Doctor of Optometry degree (O.D.) will again be available at the Massachusetts College of Optometry.

The program which will be 48 weeks in length will begin March 14, 1973. Classes will be held every Wednesday from 9 A.M. to 4 P.M. with the exception of holidays and a summer break will be arranged. The tuition has been set at $1,200 for the full course. A $200 deposit is required from all who intend to register for the course no later than March 1, 1973.

The course will cover topics in five major areas - General Optometry, Clinical Pathology, Pediatric Optometry, Rehabilitative Optometry and Social Optometry. Among the topics to be offered are:

- New Refractive Instrumentation
- Optometric Treatment of Certain Headache Syndromes
- General and Ocular Pharmacology
- Ocular Side-effects of Certain Drugs
- Ocular Effects of Certain Systemic Diseases
- Strabismus and Amblyopia
- Low Vision
- Aphakia
- National Planning for Health Delivery
- Effective Use of Ancillary Personnel

Those interested in further information should contact Dr. H. Kamens, Dean of Administration as soon as possible.

M.C.O. Alumni Association Joins National Federation of Optometric Alumni Associations

The Executive Board of the M.C.O. Alumni Association voted unanimously at a meeting held on October 18th, 1972 to join with all other Optometric College Alumni Associations in a federation formed during the 1971 A.O.A. Congress.

This Federation has been formed to foster a strong fraternal interest and relationship among the schools and colleges of optometry in the United States. Among its objectives is the development of joint activities such as educational seminars, programming, social and travel activities, exchange of newsletters, "Lost Sheep" check-up, and, most important, joint alumni pruchasing ability.

The financial security of the optometric institutions in this country is of highest priority at this most critical period in educational circles and the Executive Board felt that a combined effort on the part of all alumni of all optometric institutions would ensure maximum results.

Vision — The Mind's Peephole on the World

by

Jerry L. Christensen, O.D., Ph. D.

Of the various senses, vision is by far the most important employed by humans. One need only observe the consequences of the loss of the various senses to substantiate this statement. Vision is so closely tied to intellectual endeavors that we refer to the mind's "eye" and in the very process of thinking "visualize."

What is vision that it is essential to our leading a normal life? We know that vision is one of the senses afforded the human organism. What then is the purpose and function of the senses? There are many ways to answer this question depending on the vantage point from which the scholar is operating. Philosophers, psychologists, physiologists, biophysicists, information scientists, biologists and physiological opticists, among others, all study and analyze the senses in extremely different ways and for completely diverse purposes. We will attempt to answer the questions posed above in a general manner which might be acceptable to all concerned disciplines.

This general answer might run as follows: The senses extract information from the environment which could be useful to the organism. This definition is deceptively simple; there are several terms in it which can be interpreted and defined in various ways and so will be discussed at greater length.

By examining what is meant by the term environment we will discover the rationale for a classification of the senses. Of importance to an organism is not only its external environment, but its internal environment as well, i.e., its blood pressure, the oxygen content of the blood, etc. Thus, sensory receptors, the specific organs

mediating a particular sense, are divided into exteroceptors and interoceptors, depending on whether they sample the external or internal environment, respectively. Finer categorization is possible; the eye is further designated a teleceptor, indicating its ability to handle information arising at some distance from the organism. This capability of the eye is of no little importance in rendering vision nearly indispensable to a majority of animals owing to the fact that the ability to recognize danger at some distance is a strong preservation factor. The tasting of an entity to determine whether or not it is an enemy would not be as desirable.

The description of sensory function as the extraction of information applies serially to the various levels of sensory hierarchy. The eye, the sense organ of vision, extracts information from its input, light, which is reflected in the content of its output, nervous impulses. The lateral geniculate nucleus of the thalamus has the output of the eye as its input and its output is in the form of nervous impulses to the visual cortex. The LGN extracts information from the signals sent it by the eye. The cortex acts correspondingly in its turn as do the other visual substations.

From a functional point of view, sensory receptors are biological transducers, i.e., they change (transduce) some environmental form of energy into an energy form compatible with the requirements of the subsequent analyzing and processing stages. In the case of vision, radiant energy is changed into electrical (nervous) energy. The various receptors differ in the form of energy they convert into nervous activity and much of their unique physical structure can be accounted for by a consideration of the energy they deal with, and the information they extract from it. We will study the eyeball's form and ascertain why it has the configuration that it has.

It should be noted that much of this discussion has and will contain teleological premises and points of view. Thus, we will be examining the parts of the eye and their inter-relationships from the standpoint of purpose. We will assume these structures and their relationships to be purposive and not capricious in nature. As Gordon Walls states in his classical work, "The Vertebrate Eye and Its Adaptative Radiations": "Everything in the eye means something." Indeed, the only mechanisms necessary to justify our teleological views are random variations in biological structures and the survival of those organisms which are advantaged by a certain structure or combination of them.

The eye changes light, by definition those wavelengths of electromagnetic radiation which are visible, into electrical neural impulses which are relayed to the brain. Let us examine some components of the eye to see how they further it in its function.

How do the optical components of the eye contribute to the amount and type of information collected? The ocular optics preserves the spatial relationships between rays of light of different intensities and wavelengths by forming an image on the retina. This differentiates an eye from a simple photoreceptor or a group of them. Simple organisms possess eyespots, which are clumps of photoreceptors, located on their surface. An improvement over this arrangement is the placement of the photoreceptors at the bottom of a shallow pit, thus introducing an element of directionality lacking in surface eyespots. One creature, a mollusk, has a very pronounced pit lined with receptors and fronted by a pinhole aperture. The need for optical elements is obviated by such an arrangement, which is a biological analogue of the pinhole camera. The final improvement, the eye, allows for very detailed vision while admitting much more light than a pinhole would allow. Whereas, simple organisms merely detect the presence or absence of light; man can utilize his fine pattern vision as in the process of reading. More is involved in the differences between photoreception and vision than ocular optics, but without this physical neural-antecedent these differentiating qualities would not exist.

The human eye, like most vertebrate eyes, can alter its power. In its relaxed state, man's eye is focused at infinity. Due to various factors, such as the thickness of the sensitive layer of the retina, objects as close to the eye as twenty feet are in good focus. Inside this distance an increase in the power of the crystalline lens of the eye is required for objects to be seen clearly. This process of augmenting the refracting power of the eye is termed accommodation. Accommodation is a necessity if man is to see things clearly which are manipulated manually.

The actual transformation of energy occurs in the delicate tissue, the retina, which lines the posterior portion of the inside of the eyeball. It is here that the rods and cones are to be found.

These are the sensory receptors of the eye and they contain a pigment. These retinal photopigments absorb light. Pigments may connote coloration to you, however, they provide coloration because they absorb some wavelengths of light leaving the remainder to be reflected.

Following the absorption of light by the photopigment, the chemical energy produced is transformed into electrical energy. These energy forms are closely related. Initially, the electrical energy is electrotonically spread, i.e., passively, as ions spread through a wire, and in this manner gives rise, if it exceeds the threshold of the associated nerve fiber, to a nervous impulse which is not passively spread but which depends on metabolically supported membrane changes. The initial, non-impulse, electrical potential is termed the receptor potential. The receptor potential occurs in the rod or cones, whereas, the nerve impulse arises in an adjacent nerve cell, to which the receptor is chemically or electrically connected.

The eye not only acts as a transducer but is an analogue device. The eye is analogical in that it changes the continuum of light intensity into discrete impulses. Specifically, intensity is approximated by the logarithm of the nerve impulse frequency. This log transform serves a useful purpose as it is an example of stimulus compression, a term common in communications engineering. Basically, the transform means that an enormous range of light intensity can be signalled with a much smaller, more manageable, range of nerve impulse frequencies.

The retina contains many types of neurons, some connected in a chain and some running sideways, in the retina to inter-connect the various chains. The complexity of the retina is to be expected since this structure forms as an evagination of the brain and contains glial elements peculiar to the central nervous system. As a result, the retina does not simply change light energy into comparable amounts of electrical energy and send this information off to the brain. In the retina begins the unimaginably complex processes of encoding, organizing and analyzing the existing information. Some information is discarded and conversely information may be emphasized or hyperbolized by retinal networks. Information is not increased by the retina, entropy must increase, but certain bits of information can be signalled in a more conspicuous fashion.

The functioning of a sense organ may be influenced by its output. Feedback, as this process is termed, is quite common in biological systems. Visual adaptation, the change in sensitivity of the eye, may be dependent on feedback occuring in the retina. The gradual return of vision following our entrance into a darkened theater is an example of this adaptation. This then, is another mechanism which acts to increase the range of the eye's performance.

The retinal mechanisms providing informational advantages to the organism which we have considered is far from exhaustive. Only a few illustrative examples were chosen.

The eye movement system is an ancillary sensory subsystem. With it the visual system gathers more information in a more efficient manner than would be possible otherwise. If we explore the retina, testing its fineness of vision, we discover that only a small patch of it can provide visual acuity of such a degree so as to permit reading. This 1^{0} - 2^{0} region of critical vision is termed the fovea. Without eye movements this retinal inhomogeneity would mean that the use of our fine detail vision would be severely curtailed and we would be able to scan patterns of light only by means of cumbersome, imprecise head movements. This type of eye movement, a change in fixation from one object to another, is called a saccadic movement. Eye movements made following a moving object are somewhat different than these saccades. These "pursuit" movements are generally placed in a separate category.

The fact that man has two eyes which must be perfectly aligned to prevent his seeing double also requires eye movements of some exactitude. These adjustments of the eye are vergence movements, sometimes called disjunctive movements since the eyes are moving in opposite directions. Vergence movements have to be made whenever our distance of fixation is altered.

Lastly, there are several types of reflex eye movements. The purpose of these "hardwired" mechanisms are obvious and they are especially important to the lower animals. Static reflex movements operate to maintain the status quo, i.e., to keep the retinal image from moving across the retina. When you tilt your head backwards, the eyes reflexly rotate downward

and when you rotate your head toward the right shoulder the eyes twist around their lines of sight to the left. Inner ear structures, the otoliths, are responsible for providing the information about head position with regard to gravity required for these corrective movements. These otoliths are chunks of calcium carbonate supported by hairlike cilia and so sway in different directions depending on changes in head position.

The stato-kinetic reflexes result from changes in the angular velocity of the head. The semicircular canals of the inner ear monitor the angular acceleration of the head causing transitory movements designated vestibular nystagmus. An angular rotation of the head to the right causes the eyes to drift slowly to the left until they reach their movement limit at which point they snap back to the right. Following the cessation of rotation the movements described above are reversed in direction. You are familiar with this form of nystagmus if you have ever wound yourself up in a swing, spun around to unwind it and then observed the world rotating around you. Only during the slow phase of the nystagmus can the motion be perceived so the motion of the objects appears to be continuous. When patterns stream across the retina another form of nystagmus is evoked, optokinetic nystagmus. This consists of the eyes following the pattern nearly as far as possible at which time they snap back to near the midline where they again pick up the pattern and repeat the following. This type of nystagmus can be observed by watching the eyes of a person gazing out of a railroad car window.

It is common to use methods of stimulation to provoke these reflexes which lead to a repetitive series of eye movements. The various forms of nystagmus elicited are abnormal, i.e., the nystagmus is not the useful end result of the reflex. Rather, stimuli are generally transitory and so evoke only simple eye movement responses. As an animal runs his head may tilt with regard to gravity or be angularly accelerated, resulting in compensatory eye movements of a transient nature. These "field holding" reflex movements are beneficial.

The binocularity of the human provides him with more information than would be possible with a single eye. The brain receives a right-hand and a left-hand view and the contrast between them provides depth and distance information. Vision with two eyes increases the probability that a feeble stimulus will be seen. This could be especially important to a nocturnal animal. A light observed with both eyes is slightly brighter in appearance than when perceived with a single eye. The capabilities of the human visual system are augmented by binocularity.

Information processing is further carried out in the higher levels of the visual system, the lateral geniculate nucleus of the thalmus and in the visual cortex are the two main areas. It is in these higher centers that it is speculated that the process of perception occurs. Perception is an elaboration of sensations leading to recognition, evaluation, description, premeditated action and the like. When the individual uses visual information to perceive a chair, the preceding sensations are of its spatial arrangement, its color, etc. The moment these attributes are recognized or synthesized as a chair, perception has occurred. Visual information can be combined or influenced by information gathered by the other senses. Certainly, visual information must be correlated and contrasted to information stored in memory. We have seen that the senses collect information. Due to a variety of restraints the amount of information so collected is restricted. The brain with its predictive functions compensates for the limited information available to it. This, too, is part of the perceptual process.

We have considered briefly the function of the senses and have examined in particular some properties of the visual mechanism. The visual process was functionally subdivided and each section discussed in light of its position and purpose in the sensory system. In partitioning the visual system we have demonstrated the *raison d'etre* of the various disciplines which must be studied to come to appreciate what is known concerning vision. A visual scientist must study optics so as to understand the eye's optics and optical devices designed to correct optically defective eyes. Physiology is important to the understanding of the neural aspects of vision as well as the maintenance of the eye's health. The complexity of the processing of information by the brain requires that psychology be studied in order to grasp the human use of vision. Anomalies which are optical, physiological and psychological can disturb an individual's visual processes and it is no little part of a visual examination to determine which of these or what combination of them exists.

President's Message

[Continued from page 1]

Award to Ralph Levoy and the Frederick E. Farnum Award to Normand Madore. Dr. Paul Montiminy, Vice-president, presented first year membership certificates to each graduating senior.

ANNUAL MARCH LUNCHEON — Dr. Sylvio Dupuis, a former practicing optometrist and currently Mayor of Manchester, NH, was honored at our March Luncheon for his many contributions toward the improvement of the profession of Optometry.

A capacity audience of Alumni and their guests also heard interesting reports from Dr. Richard Hopping then president of AOA and Dr. William Baldwin, President of the College.

As we look forward to 1973 I can see renewed activity in Alumni events.

In March we will again be holding our Annual Alumni Luncheon at the NECO Congress. This year, continuing a trend for the past few years, all reservations will be *by advance sale only*. You will receive an early mailing with reservation forms enclosed. Fill it out — and send it in as soon as possible, to avoid disappointment. The program again will be interesting and the speeches short! The fellowship will be cordial and the camaraderie will be great!

Dr. Frank Kozol and Dr. Ray Ross both members of the class of '48, have announced plans for a 25th reunion for their class in March, during the NECO Congress. They have received favorable responses from over 50% of the class, with some as far away as Puerto Rico. We look forward to having the entire class together again 25 years after graduation.

Due to the tremendous response to our All Hawaiian Carnival to the AOA convention in 1971, we are sponsoring another AOA convention trip in June to San Francisco. More than 30 reservations have been received to date and many others have indicated that they wish to be part of our trip. If you wish to be included on this tour of Las Vegas, San Francisco and Disneyland, including a week at the AOA convention, please write to Dr. Morris Berman, Executive Secretary, MCO Alumni Association, 424 Beacon Street, Boston, Mass. for details.

Your Alumni Association will again host members of the graduating class at a special dinner reception some time in early February. Our hope is that through this kind of fellowship the graduating seniors will have favorable contact with those who have had practical experience in Optometry.

However, our Alumni Association is only as strong as each and every one of its members. Become a paid up member and pledge your support to MCO! I am looking forward to seeing each one of you at some of our events during the next year.

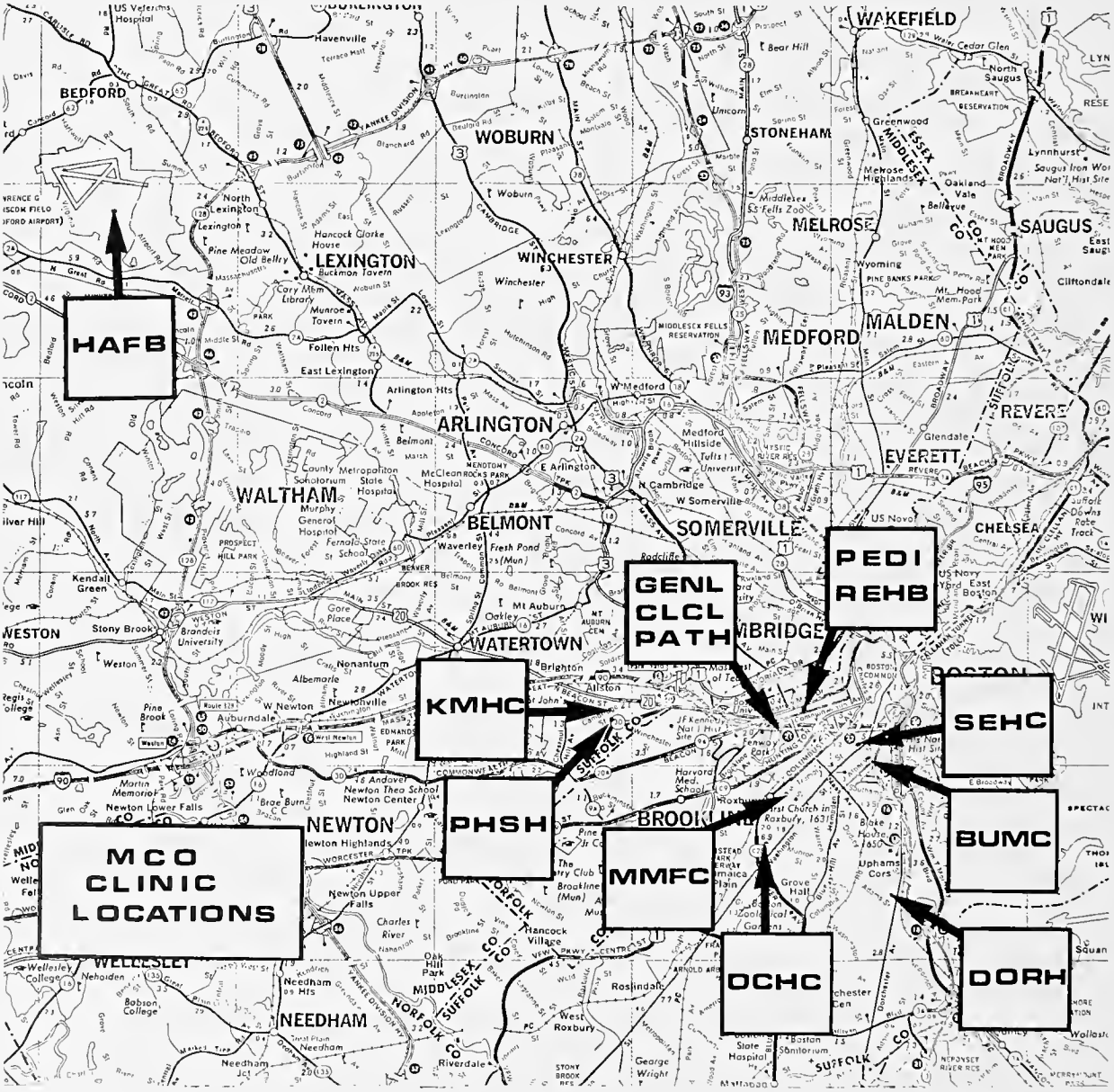
Best wishes for a healthy and prosperous year in 1973.

Save Your Vision Week

The American Optometric Student Association of the Massachusetts College of Optometry is in the process of formulating plans for the observance of the national "Save Your Vision Week" extending from March 4 - 10 this year. "Save Your Vision Week," which is always the first week in March, has been in existence since 1963, when it was proclaimed by the President. This, however, will be the first year that M.C.O. initiates a program in observance of this week. Its emphasis will be to educate the Massachusetts' community on the role of optometry in vision care, as well as to present to its own students new insights into current areas of interest.

Although the full calendar of events is not complete, a tentative schedule has been drawn up for the week. A series of lectures on such topics as Public Health, Drugs in Optometry, Glaucoma, the Retina Foundation, and Partnership, Association and Solo Practice will be presented. Free visual screenings and a special program for the education of civic leaders on optometry are also planned. In addition, there will be a massive distribution of posters, placemats, pamphlets, and eye care kits in an effort to emphasize to the public the need for proper and regular eye care.

M.C.O. Optometric Center For New England



M.C.O. Optometric Center for New England

An article published in the October, 1972 issue of the New England Journal of Optometry outlined the changes which have taken place in the educational policies, the facilities, and the clinical program of Massachusetts College of Optometry. Authored by three members of the Class of '73 at the College, David A. Vito, David I. Kahan, Robert W. McQueeney, the article lists the various Clinics, Community Health Centers, Specialty Clinics, and special Technicians Programs now operating in this area. The map reproduced below and the organizational listing following should be of interest to all alumni wherever they may reside or practice:

Organizational Listing

1. General Clinic (GENL)
   Charles F. Mullen, O.D.
   Director
   472 Commonwealth Avenue
   Boston, Massachusetts 02215
   Telephone: 536-4252

2. Contact Lens Clinic (CLCL)
   Paul F. White, O.D.
   Director
   472 Commonwealth Avenue
   Boston, Massachusetts 02215
   Telephone: 536-4262

3. Dorchester House (DORH)
   Neal Nyman, O.D.
   Director
   1353 Dorchester Avenue
   Dorchester, Massachusetts 02122
   Telephone: 228-5550

4. Rehabilitative Clinic (REHB)
   Abe Pogoda, O.D.
   Director
   422 Beacon Street
   Boston, Massachusetts 02115
   Telephone: 261-3430

5. United States Public Health Services (PHSH)
   Eye Clinic
   77 Warren Street
   Brighton, Massachusetts 02135
   Telephone: 782-3400 Ext. 346
   Peter P. Gudas, Jr., MD.
   Ophthalmological Director
   Matthew J. Garston, O.D.
   Optometric Director

6. Hanscom Air Force Base (HAFB)
   Dispensary Eye Clinic
   L.G. Hanscom Field, Massachusetts 01730
   Telephone: 861-4707
   Joseph Svagdys, O.D.
   George Mikesell, O.D.
   Directors

7. Pediatric Clinic (PEDI)
   Indra Mohindra, O.D.
   422 Beacon Street
   Boston, Massachusetts 02115
   Telephone: 261-3430

8. South End Health Center (SEHC)
   Jeffrey S. Nyman, O.D.
   Director
   65 West Brookline Street
   Telephone: 266-6336

9. Pathology Clinic (PATH)
   Peter P. Gudas, Jr., M.D.
   Director
   472 Commonwealth Avenue
   Boston, Massachusetts 02215
   Telephone: 536-4252

10. Kennedy Memorial Hospital (KMHC)
    Eye Clinic
    50 Warren Street
    Brighton, Massachusetts 02135
    Indra Mohindra, O.D.
    Optometric Director
    Peter P. Gudas, Jr., M.D.
    Ophthalmological Director

11. Vision Electrophysiology Clinic
    James W. Walters, Ph.D.
    Director
    422 Beacon Street
    Boston, Massachusetts 02115
    Telephone: 261-3430

12. Mobile Services
    William Schuller, O.D.
    Director
    422 Beacon Street
    Boston, Massachusetts 02115
    Telephone: 261-3430

After 25 Years, It's Nice to Know

(Editors' Note: The following letter is a reprint from an issue of the Alumni Bulletin of June, 1971. With Continuing Education becoming more critical to the future of Optometry, as evidenced by the many programs being sponsored by M.C.O. and many other Optometric groups, we felt that Dr. Kraus' letter merited a second reading.)

Back in 1943 when I completed my four years at the Mass. School of Optometry, I was given a certificate of graduation — and when I was lucky enough to pass my state board examination, the envelope bringing me the glad tiding was addressed "Dr. Robert I. Kraus." From that time on I had the right to sign my name Dr. Robert I. Kraus or Robert I. Kraus, O.D. — but how did I feel about this? Every time I signed my name using my title I felt peculiar. My training was as good as any given an optometric student at that time and I felt fully qualified to go into private practice — but knowing that I was practicing with a title that I never truly earned bothered me considerably. All of my patients, all of my friends, and even my children assumed that I had the title I was using and I played the game right along with them.

For twenty-five years I continued my practice doing all the things that conscientious optometrists were supposed to do. I practiced ethically and attended all the educational seminars I could that would enable me to do the best job for my patients and myself. In 1970 at the N.E.C.O. convention I learned that the Mass. College of Optometry was offering a new course to practice optometrists that would grant an O.D. legitimately at its conclusion. The course was to be from 9 a.m. to 5 p.m. and would cover many subjects of prime importance to all optometrists. I decided right then and there that this was one of the greatest opportunities that had ever come my way and I signed up for the O.D. course. Not only did I sign up but I talked a couple of other optometrists friends into doing the same.

Our first class was held on May 13, 1970 and I shall never forget that day because it was my 25th wedding anniversary. My wife Martha was in full agreement with my decision to take this course because she knew how much this meant to me. There were approximately 60 other optometrists who signed up for the course. A few from N.Y. and the rest from all of the N.E. states. I was very pleased to see that of the 60, there were five from my own class of '43. For me the hardest part of the course was taking notes while trying to listen to the lecturer. My writing wasn't too legible even when I had time to write carefully so you can be sure that my notes were pretty tough to decipher even for me — and then I've got reduced hearing in one ear that didn't help. Being age 48 didn't help either.

It seemed that most of the fellows split up into small groups for studying, having lunch together or just plain sitting together in class. This served to strengthen the bond between us even though we were all friends before — because we were all heading for that same goal. Our wives were right there with us having their own bull session while we were cramming for our exams. Sure there were exams and we were all nervous every time but the exams were very fair most of the time and our lecturers were very understanding. They knew what we were going through and they were all on our side. True, some of the lectures were boring but we managed to get through all of them with flying colors. Most of them were very interesting. The move from 178 Newbury Street to the auditorium in the school's new location helped considerably. Especially, it was nice to be able to park our cars.

The 38 weeks passed in due time and we all received our O.D.'s at the conclusion of the course at a dinner in one of Boston's fine restaurants. After dinner we went around congratulating each other with "Congratulations Doctor and I do mean Doctor." We were all extremely proud and happy.

I would highly recommend to any practicing

optometrist who does not have an O.D. that he take advantage of the courses now being given by the Mass. College of Optometry. Do yourself a favor and make it legal. I want to say that nobody suggested that I write this article. It is entirely my own idea.

As for me, "After twenty-five years, it nice to know."

Robert I. Kraus, O.D.
43 Holland Street
Somerville, Mass.

Alumni Achievements

[Continued from page 9]

Dr. Woolf served as Director of Public Welfare in Cranston for a 2-year term, when he was elected in 1960; is past president of the Rhode Island Optometric Association; past commander, Knights of Pythias; past vice president, Kiwanis Club of Cranston; past member of Cranston Boy Scout Commission, and member of Orpheus Lodge, F & AM, Cranston.

He is a member of the Auburn Post, AL, Surprise-Woolhouse Post VFW, and Cranston Chapter, DAV, and was Senior Vice Commander of JWV Post No. 23.

Dr. Woolf is a past president of the Men's Club of Temple Beth Torah and a board member of Temple Beth Torah. He has been active in vision programs for senior citizens and is a past chairman on the Committee on Vision Care of the Elderly of New England Council of Optometrists.

He and his wife have two daughters, Marsha living in Boston, and Meryl living at home.

(Reprinted from the *Herald*, Cranston, R.I.)

Dr. E. Albert Glickman, '42, Elected

The third member of the Alumni Association to serve on the Board of Trustees of the College for a term of three years has been elected by a majority of votes cast by our members. Dr. E. Albert Glickman, Class of 1942, was announced the winner over the other candidates at an Executive Board Meeting held on October 18th, 1972.

Dr. Glickman, who has conducted his practice in Brighton, Mass. for many years, has been active in state, community and alumni circles. During his term as President of the Alumni Association more interest in alumni activities was generated than had been for years previous. He has remained on the Executive Board in an active capacity since his term as President and has chaired many committees. He is most familiar with the needs and plans of the Alumni Association and should become a most helpful member of the Board of Trustees of M.C.O. during his term of three years.

This election brings to three the number of Alumni representatives serving on the Board of Trustees of the College. We hope the collective actions of our three representatives in presenting the views of the Alumni Association will result favorably to all concerned.

Dr. William R. Baldwin has announced the appointment of William O. Schuller, O.D. as Assistant Professor of Optometry and Director of Vision Screening in the Community.

Dr. Schuller is a graduate of the Ohio State University College of Optometry with a Bachelor of Science in Optometry. He earned his Doctor of Optometry degree at the University of California at Berkeley, School of Optometry.

A native of Ohio, Dr. Schuller has had a varied career with service as an Industrial Vision Optometrist, U.S. Air Force Optometry Officer, private practice in California and two and a half years as a Clinical Instructor at Ohio State.

He is the recipient of the Epsilon Psi Epsilon Distinguished Faculty Award in 1972 and has published professionally in addition to his active and successful teaching career.

Dr. Schuller lives in Brookline, Massachusetts and has been an active member in organized optometry.

3rd Year Class News

The 3rd year class would like to officially welcome the eight accelerated students of the three-year program into our midst this year raising our class enrollment to 62 students. Two of these new members deserve the highest of praise for their outstanding articles recently published in the November issue of the AOA Journal. Marcia Green was the author of an article entitled "Women in Optometry" and Wendy Leslie was the co-author of "The Patient's Reaction To A Woman Optometrist."

Several 3rd year class members, on behalf of the MCO Chapter of the American Optometric Student Association (AOSA), have been actively involved in projects which promise to be of considerable importance to Optometry.

Ron Ferrucci, MCO's National Trustee for AOSA, and also our Class President, has restructured several of last year's class committees into school-wide AOSA committees in order to broaden the base of student involvement. Class members who have been especially effective in their capacities within our local AOSA organization are Joe Molinari, who is engaged in efforts to provide optometric care to those segments of the American Indian population who would not receive such care otherwise; Joe Rowey, who will again spearhead a public relations effort in the form of coordinating visits to area high schools and Alan Gold, who has been investigating Health Professionals for Political Action (HPPA), a Boston-based national health organization which should prove to have common areas of interest with Optometry.

Another important undertaking of MCO's active membership was its participation in the American Public Health Association's annual convention in Atlantic City, New Jersey. Six students and one faculty member, Dr. William Schuller, attended the Nov. 15th program entitled "Visual Perception and Human Development." This program was sponsored by Optometry as part of its drive to obtain section status in APHA. The main goal of the student's effort was to demonstrate an interest in Optometry's role in public health and to meet and talk with other professionals involved in public health and to thereby achieve a mutual awareness of each other's education, training and areas of expertise.

Paul Kantrowich, Class of '74

Alumni Association Supporters Entertained at Fall Meeting

The usual faithful supporters of the Alumni Association showed up in full force at a Saturday night Holiday Meeting held at King's Grant on Route 128 in Danvers, Massachusetts. The meeting, conducted by Dr. Glen Gulezian, President of the Alumni Association, was preceded by a social hour and an outstanding banquet served in unusually well-appointed surroundings. From the opening time of 6:30 until midnight-closing, all alumni and their guests attending the affair enjoyed a most congenial atmosphere and, especially, the music and dancing entertainment furnished by Artie Barsamian and his orchestra.

Dr. Gulezian presented a slate of officers to be considered at our Winter Meeting to be held in January or February of 1973. Among the names submitted were Dr. Paul Montminy, for President; Dr. Henry Boroyan, for 1st Vice-President; Dr. Morris Berman, for Executive Secretary; and Drs. John Callinan and Roger McCarthy, for Directors. Names of candidates for 2nd Vice-President and for the 3rd position of a Director were solicited and will be accepted if mailed in to Dr. Berman for consideration and addition to the slate. Election of Officers of the Association will take place at the Winter Meeting.

Dr. Gulezian also reported that he now has 28 reservations on hand for the Alumni-Association-sponsored San Francisco Holiday trip to the AOA Convention to be held June 24th, 1973. The notice of this trip and an accompanying reservation slip has been sent to all alumni and all NECO members. Dr. Gulezian urged all who plan to attend the Convention to take advantage of the 14 day excursion planned and to send in their reservations at once. The deposit of $100 per person is refundable up to 90 days before the start of the trip. If further information is required, a note to Dr. Berman at 242 Beacon St., Boston, Mass. 02115 will bring immediate answers.

The following administrative changes were announced by Dr. Baldwin to take effect on 1 January 1973. Dr. John H. Carter has been designated Academic Dean and will assume supervisory responsibility for the professional academic program. Dr. Paul W. Lappin, at that time, will become Director of the Division of Visual Sciences. Dr. Carter will be Acting Director of the Division of Patient Care.

Three members of the student body at M.C.O. have had articles published in the November 1972 Journal of the American Optometric Association. Marcia K. Green, Wendy J. Leslie, Nelun Pedris are among the rapidly increasing number of women students at M.C.O. and, judging by the scope and quality of their published articles, are going to bring further honors to the College.

A Message from Congressman-elect Donald J. Mitchell, O.D, Herkimer, New York.

It is important to our Nation, our profession and ourselves that we become active in political affairs. Rightly or wrongly, government plays an ever-increasing role in our lives.

It controls, to varying degrees, such functions as our profession, our children's educations, the health care of our parents, our retirement, our income, the water we drink, the air we breathe and in several ways, our very lives.

But, these are general areas of interest that should concern everyone. Why should optometrists, as professionals, become active politically?

As government officials take an increasingly active interest in health care, optometrists should be available to help the officials make sound decisions.

For the finest possible eye care, it is essential optometry remain free and strong. As health care programs are devised, optometry must be treated as a separate and autonomous profession.

It will require large-scale political participation to maintain our present independent status and to insure the inclusion of optometry, on an equal basis with other health professions, in future health programs.

If this thinking makes good sense, how can optometrists participate in the political process? Levels of involvement vary from a one-event-volunteer in a political campaign to a full-time elected official. As a minimal contribution, I would suggest each optometrist and his wife get to know their State Legislators on a first-name basis.

One way to establish a friendly relationship with an elected official is to volunteer to help during his campaign. A wife can hold coffees, work in his headquarters or organize a fund-raising cocktail party. An optometrist can distribute campaign literature in his office, put a poster in his window, write friends, ring doorhells or send a contribution.

This relationship will not compel the legislator to support the optometrist's every whim, but it will certainly insure his careful consideration. And, even after the campaign, because most government offices are understaffed, part-time volunteers can prove helpful.

For a more definite commitment, an optometrist or his or her spouse, could become active in the political organizational structure — as a committeeman or a chairman of a ward, village, town, city or county organization. Many political organizations are desperately in need of help.

One of the most effective ways to influence legislation is to become an elected official. There are many opportunities for optometrists to serve at the various levels of government, especially in a part-time capacity. Even though taking such a step creates a few problems, I feel it is a highly worthwhile involvement. The pluses far outweigh the minuses.

In the New York State Assembly, where Dr. Abram Hubal has lobbied effectively for optometry for several years, and where I served for the past eight years, many legislators are still not aware of the distinctions between such practitioners as optometrists, ophthalmologists, ophthalmic dispensers, opticians, occultists and eye, ear, nose and throat men. The fact that these bright, informed concerned officials are confused about eye care professionals helps to demonstrate the need for greater participation in government by optometrists.

At a time when long-range changes are being contemplated in the health care field, the more people who can tell optometry's story to our legislators, the better it is for the public as well as for optometrists.

Annual Fund 1972-1973

The minimum goal of the Annual Fund in the current academic year is $25,000 to be allocated to Student Aid, Library Improvement and Student-Faculty Research.

The fund invites you to support these urgent needs through contributions and active interest in one or more of the categories indicated below. Please check your area(s) of interest:

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We would like to express our appreciation to contributors to the Annual Fund in the Alumni Journal. May we have your permission to use your name in this way?

Yes ☐

No ☐

The Massachusetts College of Optometry is fully accredited and contributions are tax deductible under the Internal Revenue Code.

Please Return To: The Office of the President, Massachusetts College of Optometry, 424 Beacon St., Boston, MA 02115.

Eleanor Warner Appointed Librarian

President William R. Baldwin, Massachusetts College of Optometry, announced the appointment of Mrs. F. Eleanor Warner, Lexington, Mass. to the position of librarian of the College.

Mrs. Warner graduated from Jackson College for Women, Tufts University with a B.A. degree and received a M.S.L.S. from the School of Library Science, Simmons College.

At the American Science and Engineering, Inc. Library in Cambridge, Mass. where Mrs. Warner served from 1967 to 1972, her work included support of scientific research conducted on Apollo flights and other astrophysical research carried on from earth-orbiting satellites.

Mrs. Warner is a member of the American Library Association, the Special Libraries Association, and the American Society for Information Science. She also is active in the Follen Community Church, Lexington; The Society of Mayflower descendants; the Islesboro (Maine) Historical Society; and the Pen, Paint & Pretzels (honorary dramatic society, Tufts University).

She is listed in the Biographical Dictionary of Librarians in the United States and Canada, 5th edition; in Who's Who in American Women, 8th edition; in The World Who's Who of Women; and in the International Scholars Directory.

Mrs. Warner lists among her publications; Catalogues and Ephermerides (with B.G. Marsden), Smithsonian Astrophysical Observatory, 1972 and a descriptive Library brochure, prepared for American Science and Engineering, Inc., selected as a model by the Federal Library Committee of the Library of Congress for national distribution.

Her position at the College includes assisting students and faculty with research in addition to strengthening the basic collection and holdings of the Massachusetts College of Optometry.

From Our Librarian

The officers of the Alumni Association have suggested that you might welcome an opportunity to place some of your seldom used books in the college library where they could resume active careers and, at the same time, relieve some of the pressure on the Library budget. It was also suggested that I make our specific needs known, since a general appeal could put you to the inconvenience of sending materials, only to find that the Library could not use some of them.

We own one or more copies of most of the titles in the following lists. Additional copies are needed, particularly since some of them are quite worn.

Donated books should be in usable condition. It is not feasible to rebind those with brittle paper or narrow margins. In many cases, a specific edition is indicated. Donors may request recognition on the book plate, as gift of or, in memory of .Donors of solicited books may also request a statement of value for income tax purposes. Generally, for used books, this will be the price listed in second hand catalogs; for new ones, it will be list price.

Because of the time required to search for this information, evaluations cannot be provided for unsolicited publications, with this exception: if a list of donations available is sent to the Librarian, evaluations will be provided for those publications which the Library can use. If such a list is sent, please include the following information: title, first author or editor, edition (if any), publisher, and copyright date. This information appears on the front and back of the title page.

Out of print books desired

THE EYE, ed. by Hugh Davson
Vol. 4, Visual Optics, 1st ed. Academic, 1962. (10 copies needed)

LIGHT, VISION, AND LENSES, by George W. Knox and V. J. Ellerborck. [publisher unknown], 1949.

OCULAR SIGNS IN SLIT-LAMPL MICROSCOPY, by James H. Doggart. Mosby, 1949.

OPTICS, 7th ed., by W.H.A. Fincham. Hatton, 1965. (7 copies needed)

PHYSIOLOGICAL OPTICS, by M. Tscherning, transl. by Carl Weiland. Keystone, 1900.

STUDIES IN VISUAL OPTICS, by Joseph I. Pascal. Mosby, 1952.

VISION AND COLOR VISION, by R. A. Houston. Longmans, Green, 1932.

VISUAL OPTICS, 5th ed., by H. H. Emsley. Hatton, 1955.

Reprinted books. Either originals or reprints desired. Prices given are for reprints.

BIOMICROSCOPY OF THE EYE, by Milton L. Berliner, 1949. Reprinted by Hafner, 1966, in 2 vols., $90.00.

INTRODUCTION TO PHYSIOLOGICAL OPTICS, by James P. Southall, 1937. Reprinted by Dover (paperbound) $3.00, and Peter Smith, $4.25.

MIRRORS, PRISMS AND LENSES, 3rd ed., by James P. Southall, 1933. Reprinted by Dover (paperbound) $5.00, and Peter Smith, $5.75.

ON THE ANOMALIES OF ACCOMMODATION AND REFRACTION OF THE EYE, by Franciscus C. Donders, 1864. Reprinted by Milford House, 1971. $55.00

RESEARCHES IN BINOCULAR VISION, by Kenneth N. Ogle, 1950. Reprinted by Hafner, 1964, $13.95.

TREATISE ON PHYSIOLOGICAL OPTICS, by Hermann Helmholtz, transl. from the 3rd German edition, ed. by James P. C. Southall, 1924. Reprinted, 3 vols. in 2, by Dover $10.00, and Peter Smith, $20.00.

Books in print

ADLER'S PHYSIOLOGY OF THE EYE, 5th ed., ed. by Robert A. Moses. Mosby, 1970, $22.50. (5 copies needed)

ADLER'S TEXTBOOK OF OPHTHALMOLOGY, 8th ed., ed. by Harold G. Sheie and Daniel M. Albert. Saunders, 1969, $17.50.

APPLIED OPTICS AND OPTICAL ENGINEERING, by R. Kingslake. Academic, 5 vol. set, $70.00.

Vol. 1, Light: Its Generation and Modification, 1965, $16.50.

Vol. 2, Detection of Light and Infrared Radiation, 1965, $16.50.

Vol. 3, Optical Components, 1965, $16.00.

Vol. 4, Optical Instruments, Part 1, 1967, $17.00.

Vol. 5, Optical Instruments, Part 2, 1969, $17.00.

ATLAS OF STRABISMUS, by G. K. von Noorden and A. Edward Maumenee. Mosby, 1967, $21.50.

THE BIBLE. (Please ask before you send, though. The most we can use is one copy of either the King James or American Revised Standard version, one copy of the Douay Bible [preferably the Confraternity edition], and an English translation of the Old Testament published by the Jewish Publication Society.)

CLINICAL REFRACTION, 3rd ed., by Irving M. Borish. Professional Press, 1970, $39.00.

CONCISE ANATOMY, 3rd ed., by Linden F. Edwards. McGraw, 1971, $11.95.

CONTACT LENS PRACTICE AND PATIENT MANAGEMENT, by Irving P. Filderman and Paul White. Chilton, 1969, $19.95.

DIAGNOSING LEARNING DISORDERS, by Kenneth W. Waugh and Wilma Jo Bush. Merrill, 1971, $5.50.

THE EYE, ed. by Hugh Davson.

Vol. 1, Vegetative Physiology and Biochemistry, 2nd ed. Academic, 1969, $26.00.

Vol. 3, Muscular Mechanisms, 2nd ed. Academic, 1970, $17.50.

FUNDAMENTALS OF OPTICS, 3rd ed., by Francis A. Jenkins and Harvey E. White. McGraw, 1957, $13.50.

GENERAL OPHTHALMOLOGY, 6th ed., by Daniel Vaughan, et al. Lange, 1971, (paperbound) $8.00.

GEOMETRICAL OPTICS, by Glenn A. Fry. Chilton, 1969, $9.50.

HISTOLOGY OF THE HUMAN EYE, by Michael J. Hogan, et al. Saunders, 1971. Book, $34.00; slides, $110.00.

INTRODUCTION TO HUMAN ANATOMY, 5th ed., by Carl C. Francis. Mosby, 1968, $9.75.

LECTURES ON GLAUCOMA, by Paul A. Chandler and W. M. Grant. Lea & Febiger, 1965, $12.50.

LIGHT AND VISION, ed. by Conrad G. Mueller. LIFE Science Library, Time-Life Books, 1966, $6.95. (3 copies needed)

LIGHT, COLOUR AND VISION, 2d ed., by Yves LeGrand, transl. by R. W. Hunt, et al. Chapman & Hall, 1968, $12.75.

MEDICAL PHARMACOLOGY, rev. 6th ed., by Andrea Goth. Mosby, 1971, $16.50.

MODERN OPTICAL ENGINEERING, by Warren J. Smith. McGraw, 1966, $17.75.

THE NERVOUS SYSTEM, by Frank H. Netter. Vol. 1 of The CIBA Collection of Medical Illustrations. Williams & Wilkins, 1962, ca $30.00.

THE OCULAR FUNDUS, 2d ed., by Arno Nover, transl. by F. C. Blodi. Lea & Febiger, 1971, $15.00.

OPHTHALMIC OPTICS, by D. A. Sheard. Hale, 1966, *L*11/69

PHYSIOLOGY OF THE RETINA AND VISUAL PATHWAY, by G. S. Brindley. Williams & Wilkins, 1970, $17.50.

PRACTICAL ORTHOPTICS IN THE TREATMENT OF SQUINT, 5th ed., by T. Keith Lyle and Kenneth C. Wybar. Thomas, 1967, $24.50.

PRINCIPLES OF OPTICS, by Arthur C. Hardy and Fred H. Perrin. McGraw, 1932, $13.50.

SEEING AND KNOWING, by F. Dretske. University of Chicago Press, 1969, $8.00.

THE SLOW LEARNER IN THE CLASSROOM, 2d ed., by Newell C. Kephart. Merrill, 1971, $8.95.

STRABISMUS, HETEROPHORIA, OCULAR MOTOR PARALYSIS: CLINICAL OCULAR MUSCLE IMBALANCE, by Rene Hugonnier and Suzanne Clayette-Hugonnier. Mosby, 1969, $40.00.

SYSTEM OF OPHTHALMOLOGY SERIES, ed. by Stewart Duke-Elder, et al. St. Louis, Mosby & Oxford, Blackwell.

Vol. 2, Anatomy of the Visual System, 1961, $35.50.

Vol. 4, The Physiology of the Eye and of Vision, 1968, $46.50.

Vol. 5, Ophthalmic Optics and Refraction, 1970, $46.50.

Vol. 8, Diseases of the Outer Eye, in 2 vols., 1965, $69.50.

Vol. 9, Diseases of the Uveal Tract, 1966, $49.50.

Vol. 11, Diseases of the Lens and Vitreous; Glaucoma and Hypotony, 1969, $49.50.

VISION AND VISUAL PERCEPTION, ed. by Clarence H. Graham, et al. Wiley, 1965, $24.95.

VISUAL PERCEPTION, by Tom N. Cornsweet. Academic, 1970, $15.00.

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